MDOT
Michigan Department of Transportation

WEST MICHIGAN
TRANSPORTATION
OPERATIONS CENTER

www.Michigan.gov/WMTOC

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Monthly Performance Measures

February 2019

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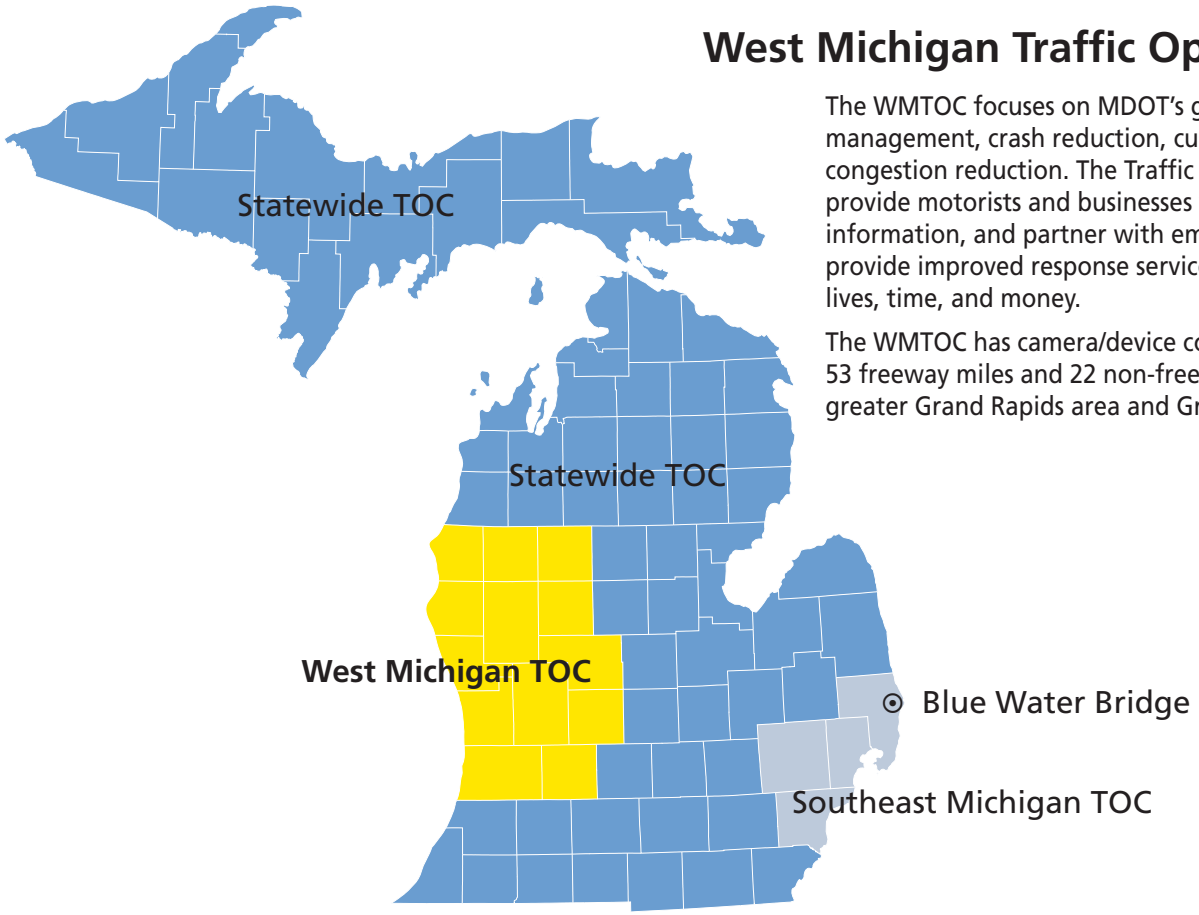
MDOT'S MISSION

Providing the highest quality integrated transportation services for economic benefit and improved quality of life.



West Michigan Traffic Operations Center

The WMTOC focuses on MDOT's goals of incident management, crash reduction, customer information, and congestion reduction. The Traffic Operations Centers (TOC) provide motorists and businesses with real-time traffic information, and partner with emergency response agencies to provide improved response services to traffic crashes – saving lives, time, and money.

The WMTOC has camera/device coverage on approximately 53 freeway miles and 22 non-freeway trunkline miles in the greater Grand Rapids area and Grand Haven.

Spotlight Events

Construction Season Preparation

Each February, West Michigan Transportation Operations Center (WMTOC) staff meet with Michigan Department of Transportation (MDOT) construction engineers at the transportation service centers (TSC) to review upcoming construction projects in the MDOT Grand Region. These meetings are extremely beneficial as they provide the opportunity to discuss the previous construction season and identify processes that worked well and areas that can be improved. TSC staff members give feedback to WMTOC regarding services provided for their construction projects. The collaborative nature of these meetings enhance the working relationships and improve coordination during the busy construction season. Understanding the scope of projects allows the WMTOC to make a plan for messaging on dynamic message signs (DMS) and portable changeable message signs. Coordinating multiple construction project messages is an important part of keeping motorists informed about current and future projects along their travel routes. MDOT construction information is provided by selecting the construction tab on Mi Drive at www.Michigan.gov/Drive.

Special Event

The 14th Annual Winter Beer Festival was held on Friday, Feb. 22, and Saturday, Feb. 23, at Fifth Third Ballpark. The event featured more than 100 Michigan breweries and brewpubs. Festival attendees were provided the opportunity to sample almost 1,000 different craft beers, listen to local bands, and enjoy a variety of food vendors as part of this event. Before, during, and after the festival, the WMTOC displayed traffic safety messages on DMS to remind the public to remain safe while traveling to and from the event.

Events by Type

Figure 1 shows events by type.

Event: An occurrence within the transportation operations center (TOC) coverage area that requires action or tracking.

Unplanned Events: An incident or other uncontrollable event that directly affects a Michigan Department of Transportation (MDOT) roadway. Unplanned events include Incidents (crashes, disabled vehicles and debris in the roadway) and other events (weather, congestion, and unclassified).

Planned Events: Events that are scheduled. These include construction, maintenance, and special events.

Of the **542** total events this month, **163 (30 percent)** were classified as **Incidents**.

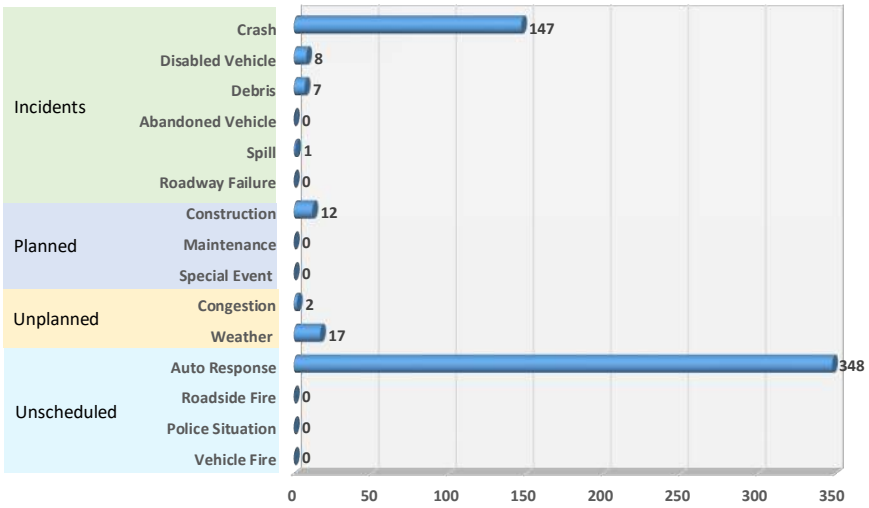


Figure 1

Incidents by Detection Source

Figure 2 provides information on detection sources.

Control room operators (CRO) rely on various sources to detect incidents that occur along the freeways. Noting the source ensures that the incident was detected by a reliable source and provides insight on which sources provide the most information.

Figure 2

Communication

Figure 3 shows communications displayed by type that are managed by CROs.

WMTOC tracks all incoming and outgoing communications to the control room. This includes phone calls, e-mails sent and received, and notifications sent to stakeholders.

CROs managed **1,310** communications this month. Of those communications, **691 (53 percent)** were e-mails, including notifications, and **619 (47 percent)** were phone calls.

The largest number of communications is with MDOT staff, which includes traffic operations, construction, maintenance, county road commission personnel, and other MDOT personnel.

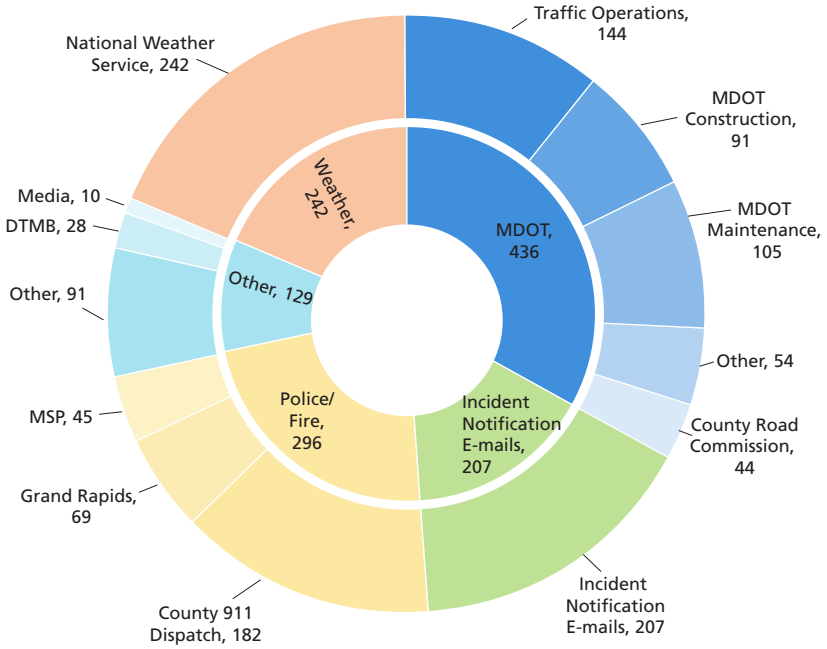
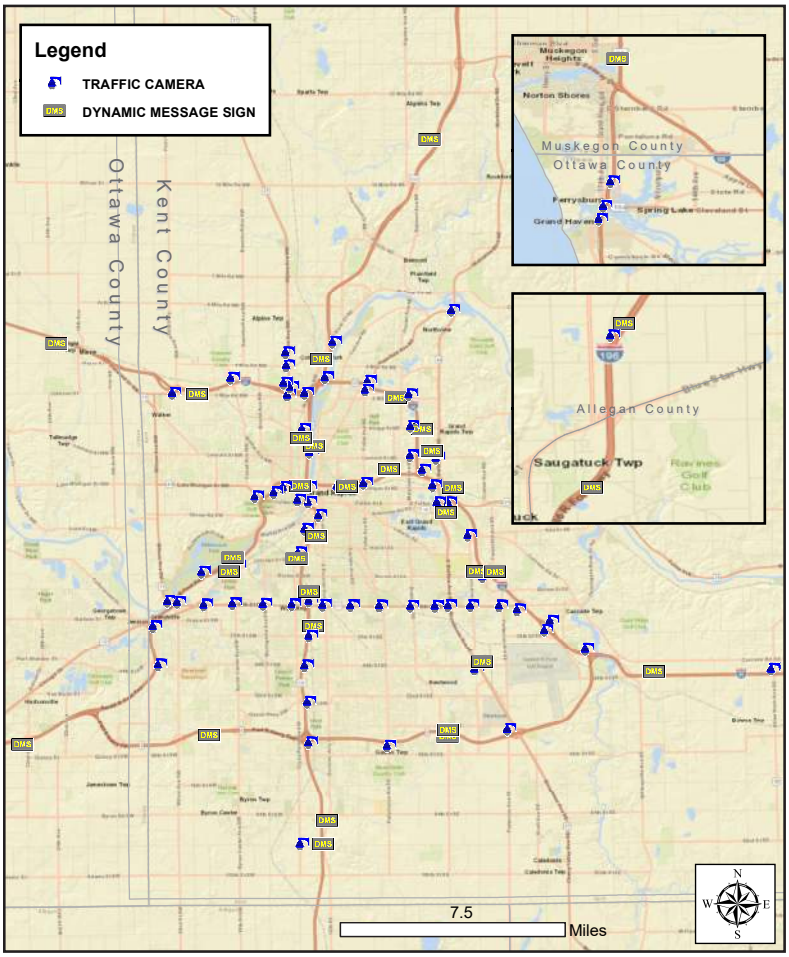


Figure 3

Device Locations



DMS Messages by Type

There were **253** "unique messages" displayed throughout the intelligent transportation systems network this month, as shown in **Figure 4**.

"Unique messages" include incidents, special events, congestion, weather, construction, or AMBER alerts.

Travel time messages are routinely displayed when unique messages are not active. Travel times are updated every three minutes.

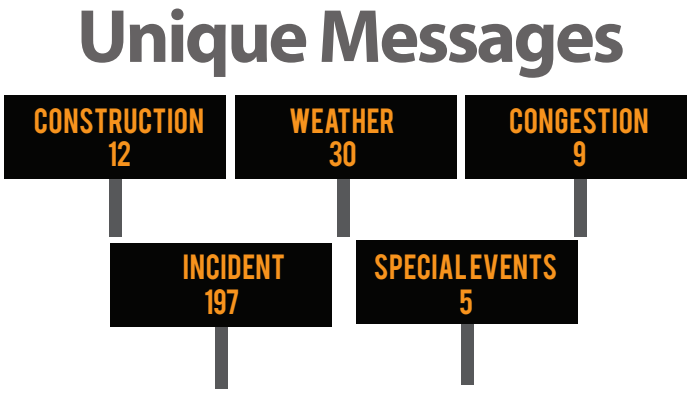


Figure 4

Field Device Availability

The WMTOC tracks the availability of all system devices so that timely maintenance can occur. Reliability of the devices ensures that the operators have tools available to accurately provide traffic conditions to the motoring public. **Table 1** shows field device availability for this month.

Device Type	Number of Devices	Percent Available
Cameras	71	91%
DMS	33	96%
Microwave vehicle detection system	132	47%

Table 1

Winter Weather Advisory Activities

The WMTOC tracked all incidents of winter weather advisory events that occurred in each of the Grand Region counties. **Table 2** shows the summary of winter weather advisory incidents. **Figure 5** shows the total number of incidents and weather advisory days by county.

Winter Weather Advisories Events	February 2019	January 2019
The number of incidents that have occurred during winter weather advisories	84	63
The percentage of total incidents for the month	50%	34%

Table 2

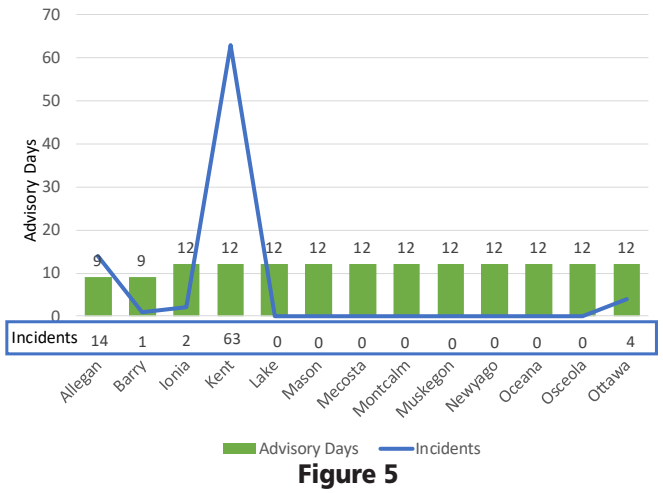


Figure 5

Incidents on Key Routes

Table 3 indicates that **US-131** had the highest total number of incidents and the highest per mile rate in February. **US-31** had the longest incident duration for the month. The table shows incidents for high-volume roadways in the Grand Region.

		February 2019			February 2018			Previous 12-month Avg.		
Route	Miles	Total Incidents	Incidents Per Mile	Average Duration	Total Incidents	Incidents Per Mile	Average Duration	Total Incidents	Incidents Per Mile	Average Duration
I-96, US-31 to M-50	52	34	0.7	0:57	46	0.9	1:02	18.1	0.3	1:02
I-196, Blue Star Hwy to I-96	40	36	0.9	1:06	39	1	0:54	26.9	0.7	0:43
US-131, 84th St to Rockford Rest Area	24.5	67	2.7	1:02	83	3.4	0:54	57.4	2.3	0:43
US-31, I-96 to M-120	8	7	0.9	1:17	10	1.3	1:18	5.6	0.7	1:40
M-6, I-196 to I-96	19	3	0.2	0:50	10	0.5	1:06	2.8	0.1	1:01
M-11, I-196 to I-96	11.5	1	0.1	0:24	0	0	0:00	1.2	0.1	1:12
M-37/M-44, M-6 to West River Dr	15.5	4	0.3	0:50	1	0.1	0:33	2.8	0.2	0:48

Table 3

Table Key Increase | No Change | Decrease Data is compared to the same month of the previous year.

Total Unplanned Incidents

There were **163** total unplanned incidents this month; **85 percent** of these were high-impact incidents. A high-impact incident is one that results in a total freeway closure, a ramp closure, or a lane closure.

Incident information is shown in **Figure 6**.

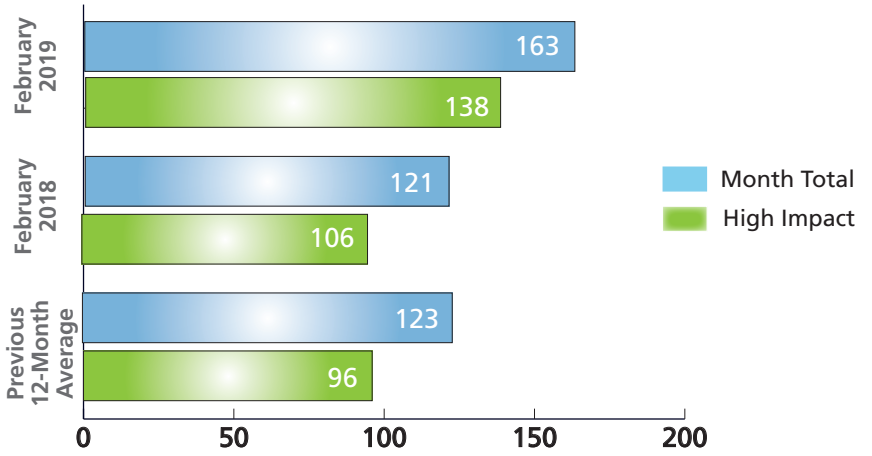


Figure 6

High-Impact Incidents

Forty-nine percent of high-impact incidents this month occurred along **US-131**. For most high-impact incidents, CROs provide e-mail notifications to stakeholders in the affected area. The notification includes the location of the incident, the degree of closure, the reason for the closure, and any other pertinent information related to traffic operations. See **Table 4**.

Closure Type	February 2019	February 2018	Previous 12 - Month Avg
Freeway Closure	29	8	13.2
Lane Closure	109	87	82.5
Ramp Closure	0	0	0.0
Total	138	95	95.7

Table 4

Work Zone-Related Events

There were **0 incidents** identified by operators as being related to work zones during this month.

Top Duration Incidents

The longest-duration incident this month occurred on **southbound US-131 after 10 Mile Road,** which lasted **9 hours, 8 minutes**. The average incident duration for February was **70 minutes**. See **Table 5.**

Location	Date	Duration	Details
US-131 after 10 Mile Road	Feb. 1	9:08	Crash
I-196 at M-40/Lincoln Road/Exit 49	Feb. 12	5:18	Crash
M-21 at Ionia	Feb. 7	4:37	Debris
I-196 after 32nd Avenue	Feb. 1	4:09	Crash
US-31 after Rosy Mound Road	Feb. 5	4:06	Crash

Table 5

Total Incidents per Weekday Hour

The WMTOC operates 24 hours per day, 7 days per week. The WMTOC is staffed locally during peak traffic hours, typically 6 a.m. to 8 p.m. Operations are transferred to the Statewide Transportation Operations Center during off-peak hours.

During the month of February, **10 a.m.** had the largest hourly number of incidents. Historically, **8 a.m.** has the greatest number of incidents in the Grand Region. **Figure 7** shows **incidents** for weekdays for this month.

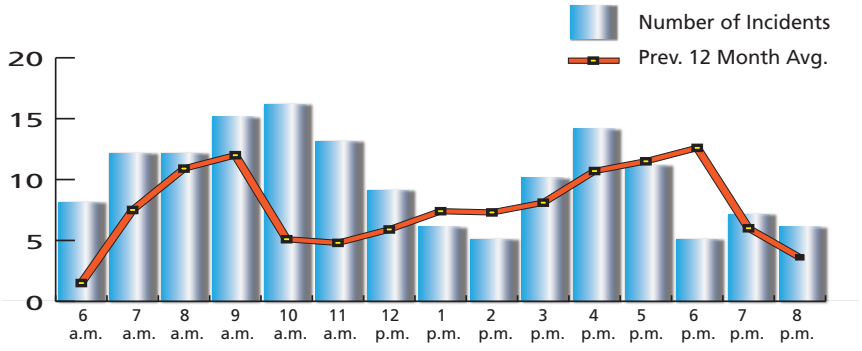


Figure 7

Incident and Roadway Clearance Times

MDOT shares a goal with local first responders to clear incidents from the roadway as quickly as possible. Reducing overall incident clearance times limits the risk to travelers and responders on scene. Effective response and clearance improves safety for motorists as well as first responders. MDOT's goal is to minimize delays caused by incidents as well as the occurrences of secondary incidents.

Roadway clearance time: The time between the awareness of an incident and confirmation that all lanes are open to traffic.

Incident clearance time: The time between the awareness of an incident and when all involved vehicles are removed from the scene.

Figure 8 shows a breakdown of the number of incidents in each time to clear bracket. **Figure 9** illustrates the average roadway and incident clearance times for the month.

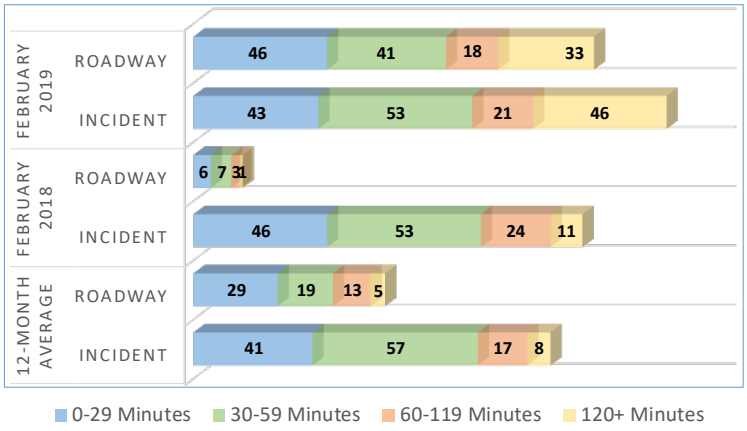


Figure 8

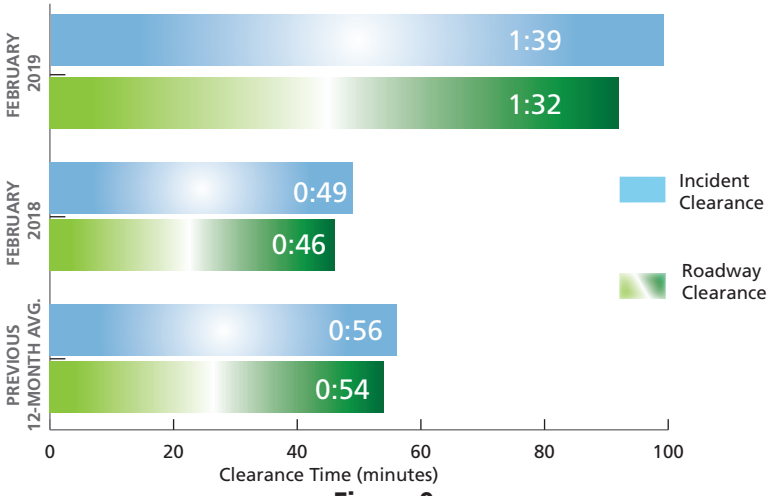


Figure 9

Secondary Crashes

Out of the **147** total crashes this month, **2 percent** were **Secondary Crashes** as observed by WMTOC CROs.

Crash Hot Spot and Most Used DMS Activity

Figure 10 shows areas where the greatest number of crashes occurred in the reported month. The shading starts with green for fewer crashes, then transitions to yellow for a moderate number of crashes, and finally to red for the highest number of crashes based on the total crashes that occurred. The top five most used DMS are also depicted on the map. The direct correlation can be seen between the areas of most crashes to DMS utilization.

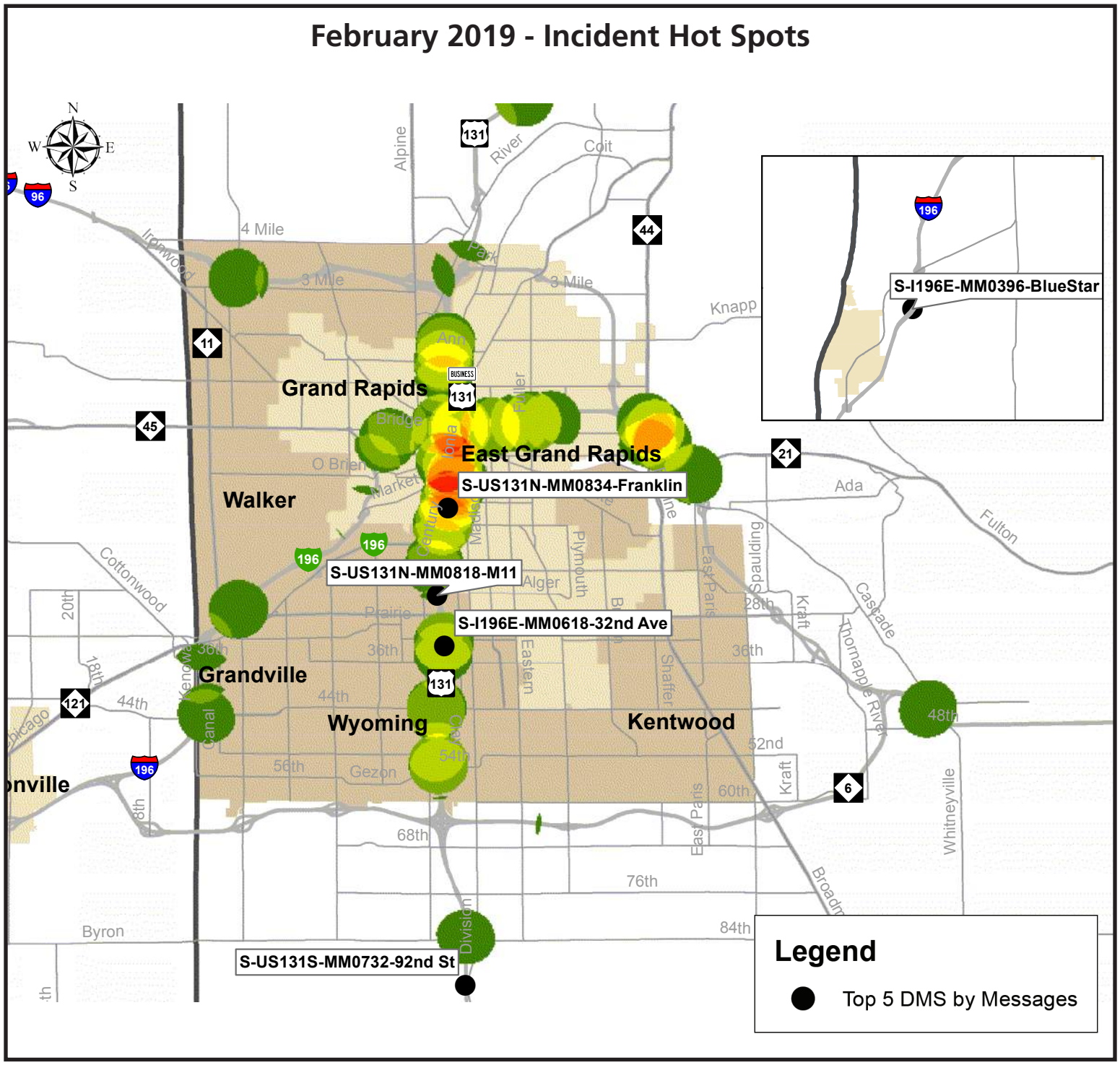


Figure 10